



# Buckeye 3D Ground

U.S. ARMY CORPS OF ENGINEERS

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**Description:** The US Army Geospatial Center (AGC) started the Buckeye 3 - Dimensional (3D) Ground Project to provide Soldiers with high quality geospatial information from a ground-level perspective. Terrestrial Light Detection and Ranging (LIDAR) sensors provide the high-resolution, 3-D geospatial data. Color cameras provide additional information that complements the LIDAR point cloud. Buckeye 3D Ground leverages capabilities developed under the Urban Recon JCTD, DARPA's UrbanScape Project and the Geospatial Intelligence Video Program.

Infused with state of the art Terrestrial LIDAR technology, Buckeye 3D Ground provides unique ground-level tactical GEOINT to the soldier. This advanced capability adds a new level of detail and realism to current urban battlefield modeling techniques. Tactical applications for Terrestrial LIDAR data include Mission Planning and Rehearsal, Route Reconnaissance, Intelligence Analysis, Pre-Deployment Training and Route Mapping.

**Capabilities:** The AGC plans and coordinates Terrestrial LIDAR data collections; exploits Terrestrial LIDAR data for operational support, and researches advanced LIDAR technologies. Terrestrial LIDAR data can be used as a stand-alone product or as an accurate foundation for rectifying models. It can also be used in conjunction with Airborne LIDAR and Electro-Optical (EO) imagery. 3D data is collected using a Commercial-Off-The-Shelf Terrestrial LIDAR scanning system. System position and orientation information is captured with an integrated global positioning system (GPS) and inertial measurement unit (IMU). Four high speed digital cameras are strategically positioned to co-collect color imagery. The imagery is used to color LIDAR point clouds, and provides an increased Level of Detail (LOD) and realism to the scene. The AGC is working to develop new tools that will enable users to integrate Terrestrial LIDAR into other geospatial products.

Examples of LAS-format colorized point clouds captured with the Buckeye 3D Terrestrial LIDAR scanner



**BuckEye Ground**  
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